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understand what organic evolution means, much less to bring its laws into operation in an intelligent manner, so as to shape their own environment thereby, to the end that they keep upon the sole narrow track of true human progress. Improvement in education and its methods; improvement in human sanitation,—wear to me more and more the aspect of kinds of growths which man no more possesses the power of checking than he possesses the ability to stay the extinction of animals in nature, or even to arrest biologic evolution its very self.

The lesson taught us by the half-tried experiment in human stirpiculture by the Oneida Community was not, or rather should not be, entirely thrown away, nor do I believe that that experiment proved to be altogether a failure. To test its worth as a mode of race improvement it should be tried upon a much larger scale, in the fuller light of our more advanced scientific knowledge, and with the element of artificial selection not left out.

On the other hand, I cannot agree with our distinguished savant Professor Joseph Le Conte when he says that "if we are to have any race-improvement at all, the dreadful law of destruction of the weak and helpless must, with Spartan firmness, be carried out voluntarily and deliberately" (*The Monist*, vol. i., No. 3, Apr., 1891, p. 334); for I believe that it requires but a rigid enforcement of a law that will prevent the marrying of such individuals or their reproducing their kind at all, to soon bring about the desired result. While civilized man may be "making his own environment," he certainly is not taking any rational steps at present to improve the race in that direction,—one of the most important of all. In ages to come I have an idea that such matters will be scientifically dealt with, and they were in my mind when I discussed the "man of the future" in my letter to *Science*, whereas Mr. Snell was surely dealing with the man of the present when he remarked upon this aspect of the case, that "the plan is fraught with collateral difficulties, and, even if these could be overcome, it seems to be forever out of the question, on account of the moral impossibility of obtaining for it, under any conceivable circumstances, the sanction of public opinion" (p. 259). And, assuredly with the man of the past when, in taking exception to my prediction of the abolition of war, he makes the somewhat isolated statement that "Chateaubriand, in his pamphlet 'De Bonaparte et des Bourbons,' calculated that more lives had been lost during the Napoleonic wars than during the whole of the Middle Ages throughout all Christendom."

That long and destructive wars are gradually becoming less and less frequent seems to me to be but a matter of comparative history. National differences are now often adjusted without resort to bloodshed, which only a century or more ago would most certainly have given rise to a resort to arms. In short, warism and all that pertains to it is a relic of savagery, and with savagery must, in time, disappear.

The realization of this prediction, taken in connection with the disappearance of widespread and fatal epidemics of disease, which are likewise becoming less and less frequent, must of necessity have a powerful influence on the man of the future. By their elimination the world will certainly be more thickly and more quickly peopled with the human species. Mr. Snell has said nothing in his communication that has had a tendency to alter my opinion in reference to the destruction of the world's fauna and much of its present flora. I cannot conceive that "any portion of the flora or fauna of the globe which has even a picturesque or decorative value" as now existing, is destined to be seen by the "man of the future," and alone represents the share which is not doomed to be destroyed. Possibly your correspondent would have me believe that some time in the future the day will arrive when all the habitable part of the globe will have been converted into one continuous, immense park, combined with biological preserves and enormous areas of dwellings and other habitations for the men of the future! It depends very much what is meant by the expression "picturesque or decorative value," for to my mind biologic, and in face of the geological history of the world as now known to us, such an outcome is simply out of the question. To me, for example, there is no doubt but that the present existing avifauna of the world, or rather the entire group of those now highly specialized forms we

call birds, are destined to become utterly extinct in nature in the future history of the earth, and yet they certainly possess a certain "decorative value." The largest or larger forms will first disappear, to be followed gradually by all those of less and lesser size. Our own avifauna is amply illustrative of this fact.

My critic said much in the leading paragraphs of his long communication that pleased me greatly; I refer especially to his remarks upon the growth of education; upon questions ethical and metaphysical; upon problems social and psychological, and upon morals; but I confess to my utter disappointment when I came to read further along in his article that he entertained such notions as "neither our senses nor our memories are as acute as those of our barbarian ancestors; our taste and capacity for intellectual speculation is not as great as was possessed by our predecessors of the scholastic period, or by the South Asiatic Aryans of any historic time;" and finally the statement, so tinctured with pessimism, that "the low vice of avarice rules the day." Were these statements true for the present hour, there could hardly be any doubt as to what some of the characteristics of the man of the future must be.

Mr. Snell unconditionally surrenders both sword and pen when he concludes by saying, "I cannot venture, in view of the complexity of the problem, to hazard a prediction even for the next stages of human evolution, to say nothing of the millions of years over which Dr. Shufeldt so gaily gambols." Why, human "evolution" is the very pith of the question we are considering, and we biologists believe that we have so far solved the riddle of the origin of life upon earth, and the growth and development of animal and vegetable forms since, and the laws that control the same, that it is quite a pardonable thing for us to do, even if it be of "doubtful utility," to forecast the fate of any vertebrated animal, man not excepted, into the future. A nineteenth century biologist, such as I am, is not likely to take umbrage at being charged with "gambolling over millions of years," for I am become already callous to the charge of "gambolling" too many millions of years in the other direction, or into the *past*, in seeking into the question of the *origin of man* there. Indeed, I take no little pride in the fact that during the last ten years I have from time to time, as far as my poor ability would allow me, lent both my voice and pen to the view that man arose upon earth at a far remoter period in its history than a few *thousand* years amount to, as many eminently good people would yet have us to believe.

R. W. SHUFELDT.

Takoma, D.C., Nov. 17.

The International Geological Congress.

THE month of August, 1891, witnessed a remarkable gathering of scientific bodies at the capital. No less than nine organizations engaged in pursuits of a scientific character met in convention in Washington. From the 10th of August to the 2d of September the following bodies held meetings, partly successive and partly contemporaneous: the American Microscopical Society; the Association of American Agricultural Colleges and Experiment Stations; the Association of Official Agricultural Chemists; the Society for the Promotion of Agricultural Science; a conference of American chemists, with the Washington Chemical Society; the Association of Economic Entomologists; the American Association for the Advancement of Science; the Geological Society of America; and the Fifth International Congress of Geologists.

As one who enjoyed the privilege of attending and participating in the three last-named gatherings, I have brought together a few memoranda of some of the many points of interest connected therewith, especially in the department of geology.

The Association for the Advancement of Science, instead of continuing for a week, as its custom has been, closed its fortieth session on Saturday, Aug. 23, and gave up the Monday and Tuesday following to the American Geological Society. During the year previous, death had removed from the list of American geologists three eminent names,—E. W. Hilgard, Joseph Leidy, and Alexander Winchell, the last of whom was the president of the society for the year. The opening paper was a beautiful tribute to his work and worth, by his brother, Professor N. H. Winchell of Minneapolis.

One of the most interesting matters presented at these meetings was the paper of Mr. Charles D. Walcott on the discovery of undoubted fish-remains in strata of Ordovician (Lower Silurian) age, near Cañon City, Colorado. The occurrence of fishes in Upper Silurian beds has long been known in Europe, and in a few cases in this country; but it was a novel, and almost startling, change in our ordinary ideas to see these specimens of abundant ichthyic remains,—chiefly small granoidal plates and scales,—from a horizon corresponding to the Trenton limestone of the East.

The library of the Columbian University was converted into a room for geological exhibits, in which were arranged a very large number of specimens and appliances of much interest. The United States Geological Survey furnished a host of maps, reports, reliefs, photographs, etc., illustrating important features of American geology and the extensive character of the work in progress therein. Numerous maps and volumes were likewise displayed by State surveys, and by individual geologists; while many remarkable specimens and suites of specimens occupied table-cases throughout the room. Among these may be mentioned an extensive series of American rocks, brought by the representatives from that country; the Ordovician fish-remains above referred to, by Mr. Walcott; a most beautiful suite of the Tertiary insects from Florissant, Colorado, named and described by Professor Scudder; and, of peculiar interest, what appeared to be unquestionably glacial groovings from a Silurian rock-surface, exposed on removal of overlying strata,—thus indicating a glacial epoch far back in early Paleozoic time. These specimens, with views of the spot, were from a Scandinavian locality. Most of this interesting material was recorded in a pamphlet "Catalogue of Exhibits."

The general plan of the Geological Congress was to take up, for each day of the session, some one comprehensive subject, and after a full treatment of it by one or two members, to discuss it broadly and compare views, but not to attempt to decide upon mooted questions. This method was the result of experience in past meetings of the Congress, wherein it has come to be seen that little is gained by the attempt to pass judgment or formulate rules. Another interesting point was that, by general consent, the lead was taken by, or rather given to, our own geologists,—the foreign delegates, while participating largely in the discussions, coming to see, and hear, and learn.

The first subject was the classification of Pleistocene (Quaternary) deposits. The opening paper was by president T. C. Chamberlain, and was a comprehensive and exhaustive scheme of genetic classification of all the forms and types of superficial deposits immediately preceding the present period. The second day was given to the topic of correlation of sedimentary rocks, and was opened at length by Professor G. K. Gilbert of the United States Geological Survey, who described the several methods, both physical (by structure) and biotic (by fossils) available in identifying and correlating rocks. The discussion on this topic became very extended, going over into the next day, and was of great interest, in that many specialists in different departments presented their methods of work and their estimates of various means. Thus Professor von Zittel dwelt on the advantages of marine invertebrates, as compared with higher forms, or correlation; Professor Cope took up the gauntlet in behalf of vertebrata; and Dr. Lester F. Ward for fossil plants; while the physical methods of correlating and classifying strata were discussed by Professor McGee in an exposition of what is sometimes termed "the new geology," as applied to the coastal region of the Atlantic States, and by Professor Van Hise in a discussion of the great pre-Columbian series, now coming to be recognized and traced in the United States, under the name of Algonkian. The general view, however, emphasized the fact that all methods of correlation vary in value inversely as the geographical distance of the beds.

The next day was given to map-coloring and cartography. Here Major Powell, the head of the United States Geological Survey, naturally led the discussion, presenting a full account of the scheme adopted for the work of the survey, which is quite different from that proposed in 1885, at the Berlin meeting of the Congress. In the subsequent discussion, one fact, very strikingly developed, was the vastness of the scale on which the work of the American survey is conducted, as compared with those of Europe.

Indeed, this same aspect came often and strongly to view during the summer,—the immense field of geology in America, the vast areas to be connected and compared, the possibility of both methods and results, when "the whole boundless continent,"—of simple structure, and under a single government,—is to be dealt with, that are different from those of the Old World,—broader, grander, and more comprehensive.

D. S. MARTIN.

New York, Nov. 14.

Fifth International Congress of Geologists.

In the current number of your journal (Nov. 6, 1891) is an article presenting Dr. Persifor Frazer's views upon the recent meeting of the International Congress at Washington. Dr. Frazer is of course at liberty to entertain such opinions with regard to the congress as he pleases, but in presenting an elaborate statistical table, as he has done here, he should at least endeavor to obtain accurate data.

Printed lists of names and addresses of members who had registered up to the fourth day of the congress were freely distributed to all who took part in the meetings. Some few belated foreigners registered after that date. Dr. Frazer's table ostensibly gives the comparative attendance at the five congresses, although he himself admits that no statistics have been given showing the actual attendance at the Paris congress. For the Washington congress he gives an attendance of 148 natives and 58 foreigners, as against 172 natives and 75 foreigners given by the printed lists above mentioned. Hence, of the four conclusions which he draws from his table, in point of fact all are incorrect, with the possible exception of the last, which I have not yet had time to verify.

S. F. EMMONS.

Washington, D.C., Nov. 12.

AMONG THE PUBLISHERS.

EARLY in 1892 Houghton, Mifflin, & Co. will publish under the title of "The Spirit of Modern Philosophy," the lectures given by Dr. Josiah Royce of Harvard in Cambridge last winter. The lectures were listened to with great interest, and, having been carefully revised, will form a work of remarkable value.

— Little, Brown, & Co. have nearly ready a new edition of Nuttall's "Hand-book of American Ornithology," brought down to date by Montague Chamberlain.

— A "Supplement to the Hand-Book of the American Academy" has just been published. It contains a list of the accessions to membership in the American Academy of Political and Social Science from Apr. 15 to Aug. 15, 545 names in all.

— Dextrine is the best substance for gumming labels. It may be purchased of almost any wholesale manufacturing chemist. It is mixed and stirred with boiling water until it obtains a consistency like ordinary mucilage, then applied to the back of the printed matter with a wide camel's-hair brush (care being taken to use paper that is not thin or unsized); after it becomes dry it is fit for use, being rendered exceedingly adhesive by a slight wetting.

— C. A. Starke, Görlitz, Prussia, has just published, says *The Publishers' Weekly*, the first number of *Ex-libris*, a journal devoted to the interests of collectors of book-plates in particular and to bookish matters in general, to be issued as often as the material in hand warrants making up a number. The first issue is almost entirely devoted to the subject-matter which gives the journal its title. It is a small quarto and handsomely printed.

— To extract grease spots from books or paper, gently warm the greased or spotted parts of the book or paper and then press upon it pieces of blotting-paper, one after another, so as to absorb as much of the grease as possible. Have ready some fine, clear essential oil of turpentine, heated almost to a boiling state; warm the greased leaf a little, and then with a soft, clean brush wet the heated turpentine both sides of the spotted part. By repeating this application the grease will be extracted, according to *The Publishers' Weekly*. Lastly, with another brush dipped in rectified spirits of wine, go over the place, and the grease will no longer appear, neither will the paper be discolored.